

## Engineering

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The design of the electrical system of any solar racing car has three main components, the batteries, the motor, and the solar array. The three main factors that must be considered with these components are weight, efficiency, and maximum power capacity. The batteries are selected based on the required battery protection system and storage capacity per unit weight. For example, Li-ion has the highest energy storage per unit weight, but requires the most extensive battery protection system. The motor is mostly chosen to fit the other components, such as the overall system voltage and expected torque required. It is also important to consider a motor capable of working with regenerative braking. Finally, the solar array is ideally made of the most efficient cells available. However, choices still must be made based on the sizes of individual cells and the ability to match the array to power trackers.